STATEMENT OF BASIS;

ENERGYSOLUTIONS LLC;

SHREDDER FACILITY, ROTARY DUMP FACILITY, INTERMODAL CONTAINER WASH BUILDING, DECONTAMINATION ACCESS CONTROL BUILDING, AND EAST SIDE DRAINAGE PROJECT

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1.0 INTRODUCTION

The purpose of this Statement of Basis (SOB) is to describe proposed changes to Ground Water Quality Discharge Permit No. UGW450005, (hereafter called the Permit) and Radioactive Material License No.UT2300249 (hereafter called the License) for EnergySolutions' low-level and 11e.(2) radioactive waste disposal facility near Clive, Tooele County, Utah; located in Section 32, Township 1 South, Range 11 West, SLBM. Blueline strikeout versions of the proposed Permit and License are presented in Appendices A and B, respectively, to this SOB.

1.1 Major Permit Changes

EnergySolutions has proposed the construction and operation of new facilities for the processing of waste it receives at its Clive operations. Some of these changes have the potential of affecting radiation safety and groundwater quality in the vicinity of the Clive facility and thus require changes to the License and Permit:

- ✓ Shredder Facility
- ✓ Rotary Dump Facility
- ✓ East Side Drainage Project

1.2 Minor Permit Changes

Changes to the following facilities are considered minor changes to the License and Permit. These were granted prior approval to the Permit revisions but are included now to complete the Permit modification process. They include:

- ✓ Intermodal Container Wash Facility
- ✓ Decontamination Access Control Building
- ✓ Box-Washing Facility
- ✓ Clarification of Wording in I.D.12

License and Permit changes proposed for all five of these facilities are identified and discussed below.

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2.0 REGULATORY REQUIREMENTS

2.1 Regulatory Requirements; R317-6

Provisions and requirements for ground water quality protection are found in the Utah Code Annotated (UCA) Section R317-6 and provide the basis for changes to the Permit.

Section R317-6-6 dictates that no person may construct, install, or operate any new facility or modify an existing or new facility which discharges or would probably result in a discharge of pollutants that may move directly or indirectly into ground water without first obtaining a ground water discharge permit from the Executive Secretary

2.2 Regulatory Requirements; URCR R313-22-32

Utah Radiation Control rules (URCR) Section R313 prescribes the regulatory requirements for issuing specific licenses in addition to, and not in place of, other requirements of the rules. URCR R313-22-32 states that the Executive Secretary may, after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Executive Secretary to determine whether the application should be granted or denied or whether a license should be modified or revoked.

In order for the Utah Radiation Control Division (Division) to ensure that all applicable regulatory requirements will be satisfied by proposed changes to licensed facilities and operations, the Licensee must submit license amendment requests detailing and justifying the proposed action according to provisions of URCR R313-22-38. As is required by Division rules, EnergySolutions (also referred to herein as "Licensee") has submitted to the Division and revised an Amendment Request (AR) to construct and operate the new facilities listed in Sections 1.1 and 1.2.

The application must meet the requirements set forth in URCR R313-22-33, it must also include general information, specific technical information, institutional information, and financial information as set forth in URCR R313-25-6 through R313-25-10.

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3.0 SUMMARY OF CHANGES TO LICENSE AND PERMIT CONDITIONS

3.1 Groundwater Quality Discharge Permit Conditions

This section describes the Permit conditions that must be changed in the Permit. The proposed permit changes are shown in Appendix A below in blueline/strikeout text. Changes shown in redline/strikeout text in Appendix A are revisions previously proposed for the Class A Combined (CAC) cell.

Part 1.D, Table 5 of the Permit provides place holders for as-built drawings that will be forthcoming for each facility. Once the facilities are constructed, the as-built conditions will be submitted for final review and approval.

Part 1.E adds new sections that deal with Best Management Practices (BMP) and performance standards for the new facilities. Examples of performance issues include: integrity of all concrete surfaces, free-draining conditions at collection sumps and manholes and in gravity-driven collection and transfer pipes used to convey waste water. These systems are to perform without release or discharge to native soils or the environment.

Changes to the Shredder Facility and Rotary Dump Facility have been identified in Part I.E.10(g) under Bulk Waste Management because the proposed facilities deal only with bulk waste management, not with containerized waste management that is the subject of Part I.E.10(f). Further modifications to the BAT requirements in Appendices J and K will be required prior to inclusion of Containerized Waste Management within these facilities.

Part 1.F sets up new BAT monitoring requirements for the Shredder, Rotary Dump, Decontamination Access Building, Intermodal Container Wash Building, and East Side Drainage Project.

New BAT reporting requirements for the new facilities are stated in Part 1.H.

Compliance schedule for the facilities are delineated in Part I.I.

3.2 Radioactive Materials License Conditions

No new radionuclides or changes to existing radionuclide concentrations will result from the construction and addition of the new facilities listed above. Changes required in the radioactive materials license will be minor. Proposed License changes are shown in Appendix B below in blueline/strikeout text. Changes shown in redline/strikeout text in Appendix B are revisions previously proposed for the CAC cell.

Revised surety provisions to cover the decommissioning costs of the new facilities will be added to the License. License Condition 76 was revised to become License Condition 77 and a new License Condition 76 was added to stipulate that sureties provided comply with License

Condition 73 must be in place and accepted by the Executive Secretary, prior to operations of the Shredder, Rotary Dump, and East Side Drainage Facility, prior to operating the Shredder, Rotary Dump, or East Side Drainage Facility.

The surety for the Intermodal Container Wash Building and the Decontamination Access Control Building are already in place as minor modifications to the Permit. Permission has been granted to commence operations of these facilities.

4.0 SHREDDER FACILITY

4.1 Description

EnergySolutions proposes to construct and operate a new shredder facility which will be located north of the northeast corner of the Class A North disposal embankment. The facility will reduce the sizes of various components to reduce void space in the disposal units and thereby improve the long-term performance of the disposal unit. The facility will receive and process Class A Low-Level Radioactive Waste (LLRW) and 11e.(2) wastes. Management controls will minimize cross contamination within the separate disposal embankments.

4.2 Issues and Conclusions

4.2.1 Facility Design

The facility will be constructed on a concrete containment pad and foundation that is approximately 550 feet long and 150 feet wide. A shredder control building, constructed north of the shredder rotary hammers, will house the motor, hydraulic, and electrical control rooms.

The Executive Secretary has determined that final authorized engineering design and specifications for waste and wastewater facilities provide best available technology at the proposed shredder facility.This finding is based on engineering plans and specifications summarized in Table 5 of the Permit. The design elements and standards that promote this conclusion include:

- Concrete surfaces to catch and retain stormwater and wastewater for controlled management.
- Water stops incorporated in the concrete construction to prevent water migration into the ground.
- Free drainage of wastewater into controlled sumps, catchbasins, and ponds for controlled management.
- Wastewater conveyed timely into managed facilities.
- Controlled evaporation pond to contain wastewater.

4.2.2 Facility Construction

The facility will be constructed based on plans and specifications submitted. Critical items reviewed in the documents include those items associated with potential releases into the environment and into the groundwater. Piping and piping appurtenances will be monitored during construction to ensure they are constructed, tested, and placed into service as specified. Concrete structures will be inspected to assure waterstops are place as specified.

4.2.3 Facility Operations

During operations of the facility a water injection system will be deployed in the hammer mill to suppress dust, smoke, and fire. The long term performance standard for water generated on site includes water collected in several catch basins and gravity fed via pipeline to the Rotary Dump Facility sediment basin west of the Shredder Facility. In the short term water will be manually transferred to the 1995 and 1997 evaporation ponds.

Material to be shredded in the facility will be fed from the west end into a feed conveyor and subsequently fed through the top of the shredder. The shredded material will then exit east of the shredder via an outfeed conveyer and stockpiled on the east end of the containment pad. A concrete containment wall limits shredded material to the concrete pad.

Operations consists of waste placed on the infeed conveyor to the shredder using track hoe mounted hydraulic pinchers or a front-end loader. A front-end loader will be used to load shredded waste from the outfeed pad into rock trucks for transfer to the disposal cell. All of these types of heavy equipment are currently in use at the site. The shredder operations will introduce new maintenance requirements beyond those currently required, but relate only to the effective operation of the shredder.

Waste storage is not authorized at the Shredder Facility. Thus, all shredded waste will be removed by the end of each work shift as stated in Permit condition Part I.E.10 (g).

Although the Shredder Facility will potentially process both LLRW and 11.e(2) waste, it will be decontaminated between shredding campaigns to ensure that cross contamination of the two separate disposal embankments does not occur as stated in License Condition 51. Following precedents already set at the existing Railcar Rollover Facility, all wastewaters generated at the Shredder will be considered LLRW, despite the fact that 11.E.(2) waste is periodically handled there.

The Shredder Facility is not authorized to process wastes containing polychlorinated biphenyls (PCBs), as stated in Permit Condition Part I.I.6, until a revised Plan for the Management of PCBs (Appendix I) has been submitted, reviewed, and accepted by the Executive Secretary.

The management of waste water generated by the Shredder Facility using manual methods and processes has been temporarily approved. These manual methods and processes involve pumping wastewater from Manhole #1 into frac tanks placed on the concrete pad. Operations under this temporary approval must cease within 6-months from the August 28, 2006, the date when the Division approval letter to construct the East Side Drainage project was issued. (Refer to Permit Condition Part I.I.7)

Revisions to the Permit require the Permittee to operate and maintain the Shredder Facility (Refer to Permit Part I.E.20):

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit.

b) To ensure the physical integrity of all concrete surfaces to prevent discharge to subsurface soils or groundwater.

c) On an annual basis during the second quarter of each year, the Permittee must remove all waste from the Shredder Facility, pressure wash all surfaces to remove all foreign material, and inspect all concrete surfaces. The Permittee must repair or otherwise seal and render impermeable any and all cracks, ruptures, damage, or porous areas prior to resuming use of the facility. At least one week prior to the annual inspection the Permittee will submit written notice to allow the Executive Secretary the opportunity to have a DRC representative present.

d) To ensure that free draining conditions over the entire concrete pad to each of the seven catch basins, and to ensure the water level in each catch basin is below its respective grate.

e) To ensure wastewater level in Manhole #1 is maintained at or below the invert to the outlet pipe, and free draining conditions exist in the conveyance pipe to the Rotary Dump Sediment Basin.

4.2.4 Radiation Protection

Supplemental dose calculations were performed for the shredder facility that estimate potential dose to members of the public. The calculation was performed not taking any credit for dust suppression and is therefore conservative. The annual cumulative effective dose equivalent (CEDE) to a member of the public at the restricted area boundary was calculated to be 0.04 mrem/year, with an annual organ dose (lung) of 0.4 mrem. The maximum average removable alpha activity may not exceed 500 dpm per 100 cm^2. The estimated contribution of alpha dose to a member of the public resulting from surface alpha contamination was calculated to be 0.04 mrem/yr from uranium-238, with an annual organ (bone) dose of 0.01 mrem/yr. The Division agrees with these calculations.

The shredding process will be controlled initially with an Operational Work Permit (OWP) which will become a Standard Operating Procedure (SOP) following evaluation and revisions by the Licensee. In accordance with EnergySolutions' Radiation Protection Program, a radiation work permit (RWP) will also support the shredder process. In the RWP, specific radiological requirements, such as surveys and air sampling will be performed to ensure that dose is maintained as low as reasonably achievable (ALARA). Both the OWP and the RWP are essential elements of the EnergySolutions Radiation Safety Manual, a requirement for facility operations under License Condition 88.A.

4.2.5 Environmental Monitoring

Based on dose assessments performed in support of the shredder design, construction, and operation, no further HVAC or other emission control equipment is necessary to control dose to operating personnel or the general public. The dose assessment includes conservative assumptions about the waste form, potential for dust resuspension, and takes no credit for dust suppression. Therefore, the calculated doses overstate the actual or potential dose. This will be verified by operational monitoring.

If environmental air monitoring indicates excessive airborne radioactive materials, operating time can be limited by disposing some waste without shredding. The release rate depends on the

waste form and how much waste is processed through the shredder. Thus, if the 'operating time' is reduced, the source term for occupational or environmental does will also be reduced. Debris waste is currently disposed without shredding. Thus, if waste is not processed through the shredder the dose consequences have already been examined and approved.

Revisions to the Permit (Part I.E.20) require the Permittee to inspect, sample, analyze, or otherwise monitor other points of compliance. For the Shredder Facility these points or instruments include monitoring to determine:

1) Free draining conditions throughout the concrete surfaces to the 7 catch basins.

2) Physical integrity all concrete surfaces.

3) Water level at each catch basin and manhole.

4) Free draining conditions of all wastewater transfer piping.

4.2.6 Groundwater Quality Protection

Protection of the groundwater at the shredder facility will be provided by the concrete containment pad, concrete catch basins and pipeline conveyance systems, evaporation pond(s), daily inspections, and by annual inspections involving complete cleaning and removal of waste, and repair and maintenance of concrete surfaces. Joints that provide water containment are constructed with water stops.

The revised Permit (Part I.F.25) requires the Permittee to conduct daily monitoring of the Shredder Facility to demonstrate compliance with the Best Available Technology requirements of Part I.E.20 of the Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K of the Permit, respectively, including:

a) free draining conditions.

b) physical integrity of concrete surfaces.

c) absence of discharge to the ground or groundwater.

The Permittee must maintain written records of the findings of these daily inspections on site. All daily inspection records must comply with the requirements of Part II.G of the Permit.

Revisions to the Permit in Part I.I.8 require the Permittee to submit a revised BAT Monitoring Plan contained (Appendix J) of the permit to address the final operation of the Shredder Facility, and receive the Executive Secretary's approval prior to operating the Rotary Dump Facility to process radioactive waste materials.

Revisions to the Permit in Part I.I.10 require the Permittee to submit a revised BAT Contingency Plan (Appendix K) to address the final operation of the Shredder Facility, and receive the Executive Secretary's approval prior to operation of the Rotary Dump facility to process radioactive waste.

4.2.7 Compliance Schedule

Revisions to the Permit Part I.I.4 require the Permittee to submit an As-Built Report for the Shredder Facility. Prior to operation of the Shredder Facility to process any radioactive or contaminated wastes, the Permittee must submit for Executive Secretary review and receive approval of an As-Built Report that details final construction of the facility, including:

1. Any deviation in design and specifications authorized by any portion of any drawing listed the Table 5, of the Permit.
2. Records documenting inspections, testing, test results, measurements, and other quality control/quality assurance activities.

After receipt and approval of this As-Built information, the Executive Secretary believes that the information requirements of UAC R317-3 will have been satisfied with respect to design requirements for the wastewater collection, treatment, and disposal system at the Shredder Facility.

Revisions to the Permit Part I.I.6 also require the Permittee to submit a revised Plan for the Management of Waste Containing Polychlorinated Biphenyls (Appendix I) and receive Executive Secretary approval, prior to operating the Shredder Facility to process wastes containing polychlorinated biphenyls (PCBs).

Revisions to the License in Condition 76.A require the Licensee to submit a revised surety estimate for the new Shredder Facility, and secure Executive Secretary approval before operation of the facility to process contaminated LLRW waste.

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5.0 ROTARY DUMP FACILITY

5.1 Description

EnergySolutions has requested approval to construct and operate a new Rotary Dump Facility. The Facility will be located north of the center portion of the Class A North Disposal Unit. The facility will be used to unload gondola railcars delivering bulk Class A LLRW and 11e.(2) wastes. Ancillary functions of the facility include a thaw shed (for defrosting railcars in the winter) and a railcar wash and inspection area (for completing decontamination and release surveys of railcars).

The waste managed in this facility will be limited to bulk Class A LLRW and 11e.(2) soil and debris delivered in gondola-style railcars. No new waste type or contaminants beyond those currently approved in EnergySolutions' Class A and 11e.(2) Radioactive Material Licenses will be managed at the facility.

5.2 Issues and Conclusions

5.2.1 Facility Design

The facility consists of three major buildings: (1) thaw shed; (2) rotary dump; and (3) rail car wash and inspection area. EnergySolutions drawing series 05006 describes the engineering design of the facility. Said drawings are listed in Table 5 of the Permit.

The design of the facility provides environmental protection by control and prevention of wash and storm water from entering the ground or ground water. Included in the subgrade design of the thaw shed is a bed of sand on an HDPE liner that will collect and remove water that may drip from railcars passing through the thaw shed during winter conditions. A 4-inch PVC perforated PVC pipe collects the water and conveys it into the rotary building and toward the sediment basin.

The rotary dump building is constructed of subgrade concrete walls and floors with slopes draining toward the sediment basin. Water stops have been included at all joints to prevent wastewater leakage to subgrade soils and groundwater. There are also tire cleaning grates at entrances and exits to minimize the tracking of soils outside the building.

The wash down building also consists of concrete floors and drainage to collect wash water used to decontaminate railcars after they have been emptied of their contents. These wastewaters are directed to the rotary dump building where they are re-used in a primary stage of railcar washing. Eventually this wastewater is directed to the sediment basin.

All wastewaters collected at the sediment basin are then conveyed to an evaporation pond, whose design is still under Executive Secretary review. Said conveyance will be accomplished via a dual-wall pressurized pipe, whose primary or conductor pipe will discharge to the evaporation pond. The annular space between the primary and secondary pipes will gravity drain back to the rotary bay area for leak detection observation.

Rail cars will enter into the facility from the west end of the building, which is the thaw shed. The first 240 feet of building house radiant heaters that will be used in winter months to defrost the rail cars. After a rail car passes through the thaw shed in to the rotary dump building. Here clamps for lids are released. When used, tarps covering cars will be removed. Contents of railcars will be sampled prior to being pulled into the rotary dump.

The end rings of the rotary dump are long enough to accommodate a full 66-foot gondola car without having waste hit the end rings. Once the rail car is in position between the end rings, clamps will engage the top rib of the rail car in four places and the car is rotated over with water spray from misters on the catwalk. As the car is in the inverted position, operators will then use water cannons with a flow of approximately 300 gallons per minute (gpm) at 120 psi to clean the inside of the car. The car is then rotated back to the upright position and the lid (if any) returned to its place. The next rail car will come in, bump the knuckle of the rail car and push it to the wash and inspection area.

After construction is complete, as-built drawings and other required documents will be added to the Permit.

5.2.2 Facility Construction

Construction of the Rotary Dump Facility will be in accordance with the construction plans and specifications provided in the drawings listed in Table 5 of the Permit. Critical items reviewed in the documents include those items associated with potential releases into the environment and into the groundwater. The licensee is responsible to conduct construction inspections to ensure construction is performed according to the approved design requirements and specifications.

5.2.3 Facility Operations

Waste unloading operations will follow the standard practices used at the existing rollover facility. After the rail cars are dumped, a loader will operate in the bottom of the pit to load trucks to transport the waste to the shredder or to a disposal cell. Excess water that is not absorbed into the waste will free drain to a double lined sediment basin where solids settle out. After settling, the waste water flows into a double lined holding tank. Water is pumped through a dual-walled pipe to an evaporation pond, yet to be authorized (Northwest Evaporation Pond). Operation of the proposed Rotary Dump Facility will not occur prior to authorization by the Executive Secretary.

The rail car wash is automated, similar to a drive-through car wash. The truck of the rail car is picked up by the car indexer to move it through the facility. The rail car is moved through an arch that can be used to spray surfactants onto the car for pre-soak treatment and to decrease the surface tension of the water. The indexer then shifts the car to the next arch where the car is cleaned using water with multiple heads that are driven by a pump spraying the water at 340 gpm and 100-psi. A 500-psi pressure washer is also available on each side of the car for use should additional cleaning be required. Once cleaned, the car proceeds through a forced air dryer to dry the car for inspection.

Although the Rotary Dump Facility will potentially process both LLRW and 11.e(2) waste, it will be decontaminated between dumping campaigns to ensure that cross contamination of the

two separate disposal embankments does not occur as stated in License Condition 51. Following precedents already set at the existing Railcar Rollover Facility, all wastewaters generated at the Shredder will be considered LLRW, despite the fact that 11.E.(2) waste is periodically handled there.

Revisions to the Permit (Part I.E.21) require the Permittee to operate and maintain the Rotary Dump Facility:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit.

b) To ensure the physical integrity of all concrete surfaces to prevent discharge to subsurface soils or groundwater.

c) On an annual basis during the second quarter of each year, the Permittee must remove all waste from the Rotary Dump Facility and pressure wash all surfaces to remove all foreign material, and inspect all surface areas of the concrete access drives and concrete floor of the Rotary Dump Building. The Permittee must repair or otherwise seal and render impermeable any and all cracks, ruptures, damage, or porous areas prior to resuming use of the facility. At least one week prior to the annual inspection the Permittee must submit written notice to allow the Executive Secretary the opportunity to have a DRC representative present.

d) To ensure that free draining conditions exist in all wastewater transfer pipes without release or discharge to subsurface soils or groundwater.

e) To ensure the leak detection annulus of the sediment basin is free of fluids.

f) To ensure the water level in the sediment basin is below the level of the grate covering the pump sump.

g) The dual-walled pipe used to transfer fluids from the sediment basin is free draining, and the leak detection annulus within the secondary pipe is free of fluids.

5.2.4 Radiation Protection

Rail cars that are dumped and cleaned are indexed to the inspection area for a radiological release survey and inspection. Should additional decontamination be required, it will be done manually. Once release surveys and inspections are acceptable, the cars are released from the facility's custody.

EnergySolutions will use large area radiation monitors to survey the empty rail car as it passes through the wash building. The detectors will be set up to verify that the radiation dose rate at each accessible surface of the transport vehicle will be less than or equal to 0.5 mrem per hour, as required by 49 CFR 173.443(c). This survey can also be performed with hand-held radiation instrumentation.

Operation of the Rotary Dump will be controlled initially with an Operational Work Permit (OWP) which will become a Standard Operating Procedure (SOP) following evaluation and revisions. In accordance with EnergySolutions' Radiation Protection Program, a radiation work

permit (RWP) will also support the rotary dump process. In the RWP, specific radiological requirements, such as surveys and air sampling will be performed to ensure that dose is maintained as low as reasonably achievable (ALARA). Both the OWP and the RWP are essential elements of the EnergySolutions Radiation Safety Manual, a requirement for facility operations under License Condition 88.A.

Offsite lung dose at the boundary of the Restricted Area resulting from operation of the Rotary Dump Facility were estimated to total 7.3 mrem/yr, well within allowable regulatory limits. External doses to facility workers will be similar to those already approved for other facilities, since no appreciable changes in waste, geometry, or operating procedures will be made.

5.2.5 Environmental Monitoring

The floor of the Rotary Dump building will be constructed of reinforced concrete and sloped to free drain to a double lined sediment basin. The facility will be enclosed in a building to minimize potential contact with ambient precipitation and releases to the atmosphere. The Rotary Dump building floor will have steel wear bars to protect the concrete floor's integrity. The use of tire cleaning grates at the entry and exit points for heavy equipment will reduce the amount of dirt and mud brought into the facility from haul roads and reduces the potential for waste to be tracked out of the facility onto haul roads.

Air monitoring stations north of the Rotary Dump Facility are located on the northern boundary of the Restricted Area and will be used as Point of Compliance (POC) environmental air stations to monitor effluents and ensure compliance with release standards and public dose limits as required by License Condition 26.

Revisions to the Permit Part I.F.2(j) require the Permittee to inspect, sample, analyze, or otherwise monitor other points of compliance. For the Rotary Dump Facility these points or instruments include monitoring to determine:

1) Free draining conditions, physical condition, and integrity of all concrete surfaces.

2) Presence or absence of fluids in the Sediment Basin leak detection annulus.

3) Water level in the sediment basin.

4) Free draining conditions in all wastewater transfer piping.

5) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

5.2.6 Groundwater Quality Protection

All wastewaters generated at the Rotary Dump will be managed over HDPE membranes or concrete surfaces, as described above.

Water that is used in the wash facility will be captured in trench drains that gravity drain to a holding tank on the rotary dump floor. This holding tank feeds a filtering system and then goes into a surge tank that is used to feed the water cannons and misters in the rotary bay. Water use in the facility will be minimized by re-cycling drain water from the wash building in the Rotary

Dump Facility. It is expected that drain water from the wash building will have minimal potential for radiological contamination since it only washed the exterior of the rail cars. Water used to clean the inside of the rail cars in the Rotary Dump building (bay area) will drain to the sediment basin for removal from the facility. This wastewater will in turn be conveyed via a dual-walled pressurized pipe to an evaporation pond. The annular space of this pipe will allow detection of pipeline leakage. The ancillary drain and piping elements of the facility will be inspected and tested for construction in accordance with plans and specifications.

The revised Permit (Part I.F.26) requires the Permittee to conduct daily monitoring of the Rotary Dump Facility to demonstrate compliance with the Best Available Technology requirements of Part I.E.21 of the Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K of the Permit, respectively, including:

a) free draining conditions.

b) physical integrity of concrete surfaces.

c) water level in Sediment Basin sump.

d) presence of fluids in the Sediment Basin leak detection system.

e) absence of discharge to the ground or groundwater.

f) absence of fluid in annual space between the primary and secondary pipes of the leak detection system for pressurized pipes.

The Permittee (Part I.F.26) must maintain written records of the findings of daily inspections on site. All daily inspection records must comply with the requirements of Part II.G of the Permit.

Revisions to the Permit (Part I.I.8) require the Permittee to revise and submit the BAT Monitoring Plan contained in Appendix J of the permit to address the final operation of the Rotary Dump Facility, and receive the Executive Secretary's approval prior to operating the Rotary Dump Facility to process radioactive waste materials.

Revisions to the Permit (Part I.I.10) require the Permittee to submit a revised BAT Contingency Plan contained in Appendix K of the permit to address the final operation of the Rotary Dump Facility, and receive the Executive Secretary's approval prior to operation of the Rotary Dump facility to process radioactive waste.

5.2.7 Compliance Schedule

Revisions to the permit (Part I.I.5) require the permittee to submit for Executive Secretary review and receive approval of the following prior to operating the rotary dump facility to process or handle any radioactive or contaminated wastes:

a) Design and construction of a wastewater treatment and disposal system – including engineering design and specifications for a new northwest evaporation pond, and all related conveyances, equipment, and/or appurtenances.

b) As-Built Report detailing final construction of both the Rotary Dump Facility and the northwest evaporation pond. The As-Built Report must document:

1) Any deviation in design and specifications authorized by any portion of any drawing listed the Table 5 of this Permit.

2) Inspections, testing, test results, measurements, and other quality control/quality assurance activities.

After receipt and approval of this As-Built information, the Executive Secretary believes that the information requirements of UAC R317-3 will have been satisfied with respect to design requirements for the wastewater collection, treatment, and disposal system at the Shredder Facility.

Revisions to the License in Condition 76.B require the Licensee to submit a revised surety estimate for the Rotary Dump Facility, including all related conveyances and appertenances, and secure Executive Secretary approval before use of the facility.

6.0 EAST SIDE DRAINAGE PROJECT

6.1 Description

The East Side Drainage Project came about in response to a February 3, 2006 DRC Notice of Violation, wherein the agency discovered that EnergySolutions had constructed a dual-walled pipe system for wastewater disposal without prior Executive Secretary approval. This unapproved construction was a direct violation of State statute, rule, and Permit requirements. Facilities effected by this action included the new Decontamination and Access Control (DAC) Building, the new Intermodal Container Wash Building, and the existing Track No. 4 Rail Wash Building.

To resolve this problem an enforcement conference was held with EnergySolutions on March 30, 2006, which resulted in a March 31, 2006 DRC Confirmatory Action Letter (CAL). In turn, the CAL stipulated that EnergySolutions complete several activities by August 31, 2006, including submittal of design, construction as-built, and operational information for Executive Secretary approval, or remove the offending pipelines.

In response to the CAL, EnergySolutions provided engineering design, as-built, and operational information in six submittals, dated April 5, May 1, June 30, August 4, August 23, and August 24, 2006. On August 28, 2006 the DRC issued a Conditional Approval of the East Side Drainage Project. The applicable engineering design drawings from this approval have been added to Table 5 of the Permit. The Permit is now being modified to reflect the approved design, construction, and required operational conditions and provisions.

The East Side Drainage Project is a series of dual-walled pipes that drain waste water from the DAC, ICW, and Rail Wash on Track #4 to the 1997 Evaporation Pond. Depending on the location within the piping system, water will either gravity drain or be pumped through the piping. For pressurized pipe systems, the inner pipe of the dual-wall pipe is the carrier pipe, the outer pipe is the containment pipe that contains any releases should the inner carrier pipe ever develop a leak.

6.2 Issues and Conclusions

The annulus between the two pipes of the double-walled system will be inspected daily to provide early leak detection capability. The East Side Drainage Project was approved for construction by the DRC in a letter dated August 28, 2006. According to the approval letter, EnergySolutions has 6-months from that date (i.e., February 28, 2007) to construct and make the system operational. This was specified in conditional approval letters to operate the Decontamination Access Control Building and the ICW Building, letters dated July 7, 2006 and July 11, 2006, respectively.

Although it has already been identified in the conditional approval letters, a Compliance schedule item (Part I.I.7) has been added to the Permit.

Following final completion of construction, as-built drawings will be required to be submitted for approval, and later added as part of Table 5 of the Permit (see Part I.I.7). Best Management

Practices (Part I.F.26) for dual-wall wastewater piping in Part I.E of the Permit are modified to include items such as absence of fluids in the secondary containment pipe. Pressurized pipe that does not gravity drain to a leak detection port will be pressure tested annually (both inner and outer pipe) by an independent professional engineer registered in the State of Utah.

Daily compliance monitoring will be conducted in accordance with requirements of currently approved Appendices J and K and is identified in Part I.F. of the Permit.

Daily inspection results (Part I.F.29) in accordance with currently approved Appendix J must be reported with each Quarterly BAT report in Part I.H.. Results from annual pressure testing will be reported in the 3rd Quarter BAT Report.

Revisions to the Permit (Part I.E.24) require the Permittee to operate and maintain the East Side Drainage Project:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively, of the Permit.

b) To ensure the leak detection annulus of the dual-walled piping system is always maintained free of fluids, including the drip pans found inside manholes #1 and #2.

c) To ensure the fluid level in the 11 stormwater catch basins is always maintained below the level of their respective outlet pipes.

d) To ensure the stormwater, graywater, and wastewater piping throughout the entire East Side Drainage Project remains free draining at all times.

e) To ensure the fluid level in the stormwater lift sump is always maintained below the level of the inlet piping.

Revisions to the Permit (Part I.F.2(m)) require the Permittee to inspect, sample, analyze, or otherwise monitor other points of compliance. For the East Side Drainage Project these points or instruments include monitoring to determine the presence or absence of fluids in the leak detection annulus within the secondary piping of all dual-wall wastewater transfer systems. All dual-walled pressurized pipe connected to the East Side Drainage Project, that does not gravity drain to a leak detection port, including both primary and secondary piping, must be pressure tested annually by an independent Professional Engineer registered in the State of Utah.

Revisions to the Permit (Part I.F.29) also require the Permittee to conduct daily monitoring of the East Side Drainage Project to demonstrate compliance with the Best Available Technology requirements of Part I.E.24 of the Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit, including:

a) free draining conditions in all wastewater transfer piping.

b) absence of fluids in the leak detection annulus within the secondary pipe of the dual-walled piping system.

c) absence of discharge to the ground or groundwater.

Revisions to the Permit (Part I.I.9) also require the Permittee to submit, on or before February 28, 2007. a revised BAT Monitoring Plan (Appendix J) that incorporates new wastewater conveyance designs for the East Side Drainage Project (approved by the Executive Secretary on August 28, 2006) for Executive Secretary review and approval.

Revisions to the Permit (Part I.I.11) also require the Permittee to submit, on or before February 28, 2007, a revised BAT Contingency Plan (Appendix K), for Executive Secretary review and approval that incorporates new wastewater conveyance designs approved by the Executive Secretary for the East Side Drainage Project.

6.3 Compliance Schedule

Revisions to the permit (Part I.I.7) require the permittee to accomplish the following on or before February 28, 2007:

a) Cease manual transfer and management of wastewaters from the Decontamination Access Control Building and the Intermodal Container Wash Building, and

b) Complete construction of the East Side Drainage Project in accordance with the Executive Secretary's August 28, 2006 Conditional Approval, and

c) Submit an As-Built Report for Executive Secretary approval that details the final design and construction of the East Side Drainage Project.

Subsequent to Executive Secretary approval of the As-Built Report, the Permit may be re-opened and modified to reflect necessary changes.

Revisions to the License in Condition 76.C require the Licensee to submit a revised surety estimate for the East Side Drainage Project for Executive Secretary approval on or before February 28, 2007.

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7.0 MINOR MODIFICATIONS

Minor Permit modifications were authorized by the Executive Secretary for the Decontamination Access Control Building (DAC) and the Intermodal Container Wash (ICW) Building on July 7, 2006 (DAC) and July 11, 2006 (ICW), respectively.

7.1 Decontamination Access Control Building

The DAC facility is expected to generate only small volumes of waste water, the only sources being an emergency eyewash and shower, boot wash, and respirator wash sink. All of the waste water flows into a dual-walled below-grade holding tank with a maximum capacity of 1500 gallons. The annulus of the dual-walled tank is inspected daily to determine whether any leak has occurred and to ensure that they will be quickly identified so as to minimize any release to the environment. Water from the tank is pumped through dual-walled piping to the 97 Evaporation Pond.

Approved design requirements are stated in the drawings listed in Table 5 of the Permit. As-built drawings will be added to Permit Table 5 when construction is competed.

Revisions to the Permit (Part I.E.23) require the Permittee to operate and maintain the Decontamination Access Control Building to ensure that:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit.

b) To ensure free draining conditions exist from the bootwash and all graywater lines (i.e., eyewash, emergency shower, respirator wash sink, etc.) to the underground wastewater collection tank located outside the southeast corner of the building.

c) To ensure the dual-walled leak detection annulus of the wastewater collection tank is maintained free of fluids.

d) To ensure the fluid level in the wastewater collection tank is maintained below the invert of the inlet pipe.

e) To ensure the dual-walled piping from the wastewater collection tank to the 1997 Evaporation Pond via the East Side Drainage System is free draining and the leak detection annulus within the secondary pipe remains free of fluids

Revisions to the Permit (Part I.F.2(m)) require the Permittee to inspect, sample, analyze, or otherwise monitor other points of compliance. For the Decontamination Access Control Building these points or instruments include monitoring to determine:

1) Free draining conditions in all wastewater transfer piping.

2) Presence or absence of fluids in the gray water collection tank leak detection annulus.

3) Water level in the gray water collection tank.

4) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

Revisions to the Permit (Part I.F.28) also require the Permittee to conduct daily monitoring of the Decontamination Access Control Building to demonstrate compliance with the Best Available Technology requirements of Part I.E.23 of the Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit, including:

a) free draining conditions in all wastewater transfer piping.

b) water level in the gray water collection tank.

c) presence of fluids in the gray water collection tank leak detection annulus.

e) absence of discharge to the ground or groundwater.

The Permittee must maintain written records of the findings of these daily inspections on site. All daily inspection records must comply with the requirements of Part II.G of the Permit.

Revisions to the Permit (Part I.I.9) also require the Permittee to submit, on or before February 28, 2007, a revised BAT Monitoring Plan (Appendix J) that incorporates new wastewater conveyance designs for the Decontamination Access Control Building (approved by the Executive Secretary on August 28, 2006) for Executive Secretary review and approval.

Revisions to the Permit (Part I.I.11) also require the Permittee to submit, on or before February 28, 2007, a revised BAT Contingency Plan (Appendix K), for Executive Secretary review and approval that incorporates new wastewater conveyance designs approved by the Executive Secretary for the Decontamination Access Control Building.

7.2 Intermodal Container Wash Building

The ICW is expected to generate moderate volumes of waste water through decontamination of Intermodal containers. All of the waste water is generated and controlled over concrete surfaces and drains to a sediment basin. The sediment basin has a leak-detection annulus to identify leaks early, thus minimizing the potential for release to the environment. Water from the sediment basin is pumped through dual-walled piping to the 97 Evaporation Pond.

Approved design requirements are stated in the drawings listed in Table 5 of the Permit. As-built drawings will be required to be added to Permit Table 5 when construction is completed.

Revisions to the Permit (Part I.E.22) require the Permittee to operate and maintain the Intermodal Container Wash Building:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit.

b) To ensure free draining conditions exist:

   i) Within each wash bay and trench drain to the sediment basin.

ii) From each boot wash station to the sediment basin.

c) To ensure the integrity of all concrete surfaces to prevent discharge of waste water to subsurface soils or groundwater.

d) To ensure the sediment basin provides a total containment system and does not cause a direct or in-direct discharge to subsurface soils or groundwater.

e) To ensure the water level in the sediment basin is always maintained below the grate located over the pump sump.

f) On an annual basis during the second quarter of each year, the Permittee must remove all waste from the Intermodal Container Wash Building, pressure wash all surfaces to remove all foreign material, and inspect all surface areas of the concrete floor and trench drains of the Intermodal Container Wash Building. The Permittee must repair or otherwise seal and render impermeable any and all cracks, ruptures, damage, or porous areas prior to resuming use of the facility. At least one week prior to the annual inspection the Permittee must submit written notice to allow the Executive Secretary the opportunity to have a DRC representative present.

g) To ensure the leak detection annulus of the sediment basin is free of liquids.

h) To ensure the dual-walled pipe used to transfer fluids from the sediment basin is free draining, and the leak detection annulus within the secondary pipe is free of fluids.

Revisions to the Permit (Part I.F.2(k)) also require the Permittee to inspect, sample, analyze, or otherwise monitor other points of compliance. For the Intermodal Container Wash Building these points or instruments include monitoring to determine:

1) Free draining conditions, physical condition, and integrity of concrete floor and floor trenches.

2) Presence or absence of fluids in the sediment basin leak detection annulus.

3) Fluid level in the sediment basin.

4) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

Revisions to the Permit (Part I.F.27) also require the Permittee to conduct daily monitoring of the Intermodal Container Wash Building to demonstrate compliance with the Best Available Technology requirements of Part I.E.22 of the Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of the Permit, including:

a) free draining conditions.

b) physical integrity of concrete surfaces.

c) water level in Settlement Basin.

d) presence of fluids in the settlement basin leak detection system.

e) absence of discharge to the ground or groundwater.

The Permittee must maintain written records (Part I.F.27) of the findings of these daily inspections on site. All daily inspection records must comply with the requirements of Part II.G of the Permit.

Revisions to the Permit (Part I.I.9) also require the Permittee to submit, on or before February 28, 2007, a revised BAT Monitoring Plan (Appendix J) that incorporates new wastewater conveyance designs for the Intermodal Container Wash Building (approved by the Executive Secretary on August 28, 2006) for Executive Secretary review and approval.

Revisions to the Permit (Part I.I.11) also require the Permittee to submit, on or before February 28, 2007, a revised BAT Contingency Plan (Appendix K), for Executive Secretary review and approval that incorporates new wastewater conveyance designs approved by the Executive Secretary for the Intermodal Container Wash Building

7.3 Box-Washing Facility

A design change was made and approved on January 30, 2006 that removed the settlement basin from the box-washing facility and replaced it with two above-ground wastewater storage tanks that are located on the concrete floor inside the Box-Washing facility. This minor change is reflected in Part I (F) 17 (c through e) of the Permit.

7.4 Wording Change

A minor wording change was made to correct the erroneous reference to the LLRW Construction Quality Assurance / Quality Control (CQA/QC) Plan in Part I.D.12. The CQA/QC Plan previously referenced by the Permit governs waste embankment construction only, and has no bearing on waste handling or wastewater collection, treatment, or discharge facilities at the site.

8.0 GROUNDWATER QUALITY DISCHARGE PERMIT REQUIREMENTS

With respect to the Shredder, Rotary Dump, and the East Side Drainage Project, the Division has determined that the request to amend both the License and the Permit to allow construction and operation of the proposed facilities addressed in this SOB constitutes a request to construct and operate significant new facilities. Hence, public participation is required. With this determination, the requirements of UAC R317-6-6.4(A)1 through 4 apply and must be satisfied. The Division's assessment of the extent to which these requirements have or will be satisfied is presented below.

8.1 Groundwater Quality Protection and Permit Limits

Requirement UAC R317-6-6.4(1):

The Permittee must demonstrate that the applicable class TDS limits, ground water quality standards protection levels, and Permit limits established under R317-6-6.4E will be met.

Assessment:

The proposed Permit changes do not include any change to groundwater classification or protection levels. Hence these existing Permit limits remain unchanged.

Further, wastes and wastewaters at the proposed Shredder and Rotary Dump facilities will be controlled and contained over reinforced concrete surfaces and conveyed to evaporation ponds for disposal. In cases where wastewaters are temporarily stored in below ground tanks or basins, these are double –lined, and the annulus space routinely monitored to detect and control leakage before any release to the environment.

Existing evaporation ponds included double flexible membrane liners (FML), leak detection systems and groundwater monitoring wells to detect, prevent, and control any discharge to the environment. The new Northwest Evaporation Pond will be required to have equivalent engineering design, construction, and performance.

Based on the information summarized above, the Division concludes that the Licensee's proposed Facility changes are acceptable.

8.2 Monitoring, Sampling, and Reporting

Requirement UAC R317-6-6.4(2)

The monitoring plan, sampling and reporting requirements must be adequate to determine compliance with applicable requirements.

Assessment: The Permittee's proposed groundwater monitoring plan, including commitments for satisfying sampling and reporting requirements do not change from the original Permit. Beyond groundwater monitoring, new and additional monitoring requirements have been established in the Permit for operational needs related to Best Available Technology and

performance. These include, but are not limited to: routine observation of the physical integrity of the concrete surfaces and free draining conditions, detection of fluids in leak detection systems, annual pressure testing for dual wall pipes, etc. For additional information see the specific discussions above regarding each proposed facility.

Reporting requirements for groundwater quality sampling remain unchanged in the Permit. New reporting requirements have been established for each of the proposed facilities, which will ensure that the Permittee reports BAT failures in a timely manner; thus providing early warning of possible problems and greater likelihood for quick and decisive action to prevent discharges to the environment.

8.3 Best Available Technology

Requirement UAC R317-6-6.4(3)

The Permittee is using best available technology to minimize the discharge of any pollutant.

Assessment: The Permittee is proposing for the new facilities the same approaches to applying best available technology (BAT) (design, construction, and performance) that have been previously approved for similar facilities. These approaches will minimize discharge of any pollutant from any of the proposed facilities. The proposed waste handling operations, including those that generate wastewaters, are performed over reinforced concrete surfaces that drain to collection sumps; thereby preventing and controlling contaminant discharges to the ground and groundwater. Long-term performance standards have also been established in the Permit to require these wastewaters to be conveyed from the respective collection sumps to either settlement basins or evaporation ponds via piped conveyances. These piping systems include both gravity draining designs and pressurized systems. Appropriate engineering design, specifications, construction, operations, and BAT performance, monitoring, and reporting standards have been determined in the Permit by the Executive Secretary for each of the new facilities. Details regarding BAT design, construction, operations, performance, monitoring and reporting are discussed above for each of the proposed facilities.

On a short-term basis, wastewater from the Shredder facility will be conveyed manually to existing evaporation ponds already approved and found by the Executive Secretary to meet BAT requirements.

Although the engineering design has been approved for the proposed Rotary Dump operation of this facility is prohibited until after the Permittee is able to resolve additional issues regarding fate and disposal of wastewaters, including Executive Secretary review and approval of design, construction, performance, monitoring, reporting and related operational plans for a Northwest Evaporation Pond.

8.4 No Impairment

Requirement UAC R317-6-6.4(4)

No impairment of present and future beneficial uses of the ground water results from the proposed action.

Assessment: The Permittee's proposed facilities, together with its proposals for providing BAT, BAT monitoring, and BAT corrective actions provide reasonable assurance that groundwater quality will not be compromised. Even though present and future beneficial uses of the ground water at the site are limited because of the very high total dissolved solids content of ground water at the site, the groundwater quality protection standards will be met for both radioactive and non-radioactive constituents.

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APPENDIX A

Utah Groundwater Quality Discharge Permit UGW450005;

Proposed Revisions for

EnergySolutions' Shredder Facility, Rotary Dump Facility, Intermodal Container Wash Building, Decontamination Access Control Building, and East Side Drainage Project

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APPENDIX B

Utah Radioactive Materials License No. UT 2300249;

Proposed Revisions for

EnergySolutions' Shredder Facility, Rotary Dump Facility, Intermodal Container Wash Building, Decontamination Access Control Building, and East Side Drainage Project

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